

APPENDIX A:
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

On page 3, line 4, the paragraph should be amended as follows:

The amino resin used in the invention is a general amino resin such as [malamine] melamine and the like.

On page 3, lines 5-20, the paragraph should be amended as follows:

The specifically-made semi-cured amino resin and a semi-cured mixture thereof used in the invention contains at least one methylol group, for example, [malamine-aldehyde] melamine-form aldehyde resin, [malamine-phenol-formaldehyde] melamine-phenol-formaldehyde resin, [malamine-urea-formaldehyde] melamine-urea-formaldehyde resin, urea-formaldehyde, and the like. In a method for manufacturing the semi-cured amino resin, an amino compound such as urea and [malamine] melamine, or a derivative thereof is heated and refluxed under stirring in the presence of a catalyst with formaldehyde or a derivative thereof, and optionally phenol or a derivative thereof, so as to form a semi-cured amino resin such as urea formaldehyde resin, urea-phenol-formaldehyde resin, [malamine-formaldehyde] melamine-formaldehyde resin and [malamine-phenol-formaldehyde] melamine-phenol-formaldehyde resin. In the foregoing reaction, the molar ratio of formaldehyde or a derivative thereof (hereinafter designated as F) to the amino compound (hereinafter designated as M), i.e. F/M, is necessarily greater than 1.0, so as to initiate a cross-linking setting reaction in the condition of formaldehyde (F) acting as a cross-linking agent to be greater in amount than urea or [malamine] melamine (M) in the resin. The ratio F/M can be within the range of from 1.0 to 6.0, preferably from 1.0 to 2.5. With the addition of phenol or a derivative thereof (hereinafter designated as P), the molar ratio ((P+F)/(M)) of a sum (P + F) of phenol or a derivative thereof and formaldehyde or a derivative thereof to the amino resin (M) is within the range of from 1.0 to 6.0, preferably from 1.0 to 2.5.

On page 4, lines 8-14, the paragraph should be amended as follows:

The amino resin composition for mold cleaning of the invention therefore includes the foregoing obtained semi-cured amino resin having at least one methylol group, together with other thermosetting resin and additives, are stirred and mixed homogeneously in a semi-cured manner in a device such as a kneading machine, ball mill, tumble, rapid mixer and the like. Then, the mixture is charged into a roller, or a single- or double-shaft presser for [compounding] kneading. After the semi-cured amino resin cross-links, it is cooled and pulverized into particles or powders by using a pulverizer, so as to obtain the amino resin composition for mold cleaning of the invention.

On page 7, lines 16-22, the paragraph should be amended as follows:

310 weight part of [malamine] melamine, 130 weight part of phenol, 540 weight part of 37% formaldehyde aqueous solution, and 5 weight part of calcium hydroxide were added into a flask. After the mixture was heated and refluxed under 80°C for 30 minutes, it was cooled to 45°C, followed by heating and refluxing under 85°C for 60 minutes. Then, the reaction mixture was neutralized with 10% sodium hydroxide solution and dried under vacuum, so as to obtain a semi-cured amino resin of [malamine-phenol-formaldehyde] melamine-phenol-formaldehyde having 85% of solid content and gelation time of 4 minute and 30 second (measured under 150°C).

On page 7, lines 23-28, the paragraph should be amended as follows:

20 wt% of the semi-cured amino resin, 50 w% of [malamine] melamine resin, 20 wt% of silica powder with mean particle size under 20 μ m, 1.82 wt% zinc stearate, 0.08 wt% of PEG400, 8 wt% of paper pulp, and 0.1 wt% of benzoic acid, based on 100 wt% total weight of resin composition, were homogeneously pulverized and mixed by a ball mill. Alternatively, other means could be used to pulverize and sufficiently homogenize and mix the components. A resin composition for cleaning molds was obtained.

On page 8, lines 2-8, the paragraph should be amended as follows:

25 wt% of the semi-cured type of [malamine-phenol-formaldehyde] melamine-phenol-formaldehyde amino resin as in example 1 and 10 wt% of paper pulp, based on 100 wt% total weight of resin composition, were mixed and kneaded to give the [semi-solidifying] semi-cured mixture. Then 45.7 wt% of [malamine] melamine resin, 17 wt% of silica powder with mean particle size less than 20 m, 1.8 wt% zinc stearate, 0.2 wt% of benzoic acid, and 0.2 wt% of CATINITTO were added to the mixture, to be then homogeneously pulverized, and mixed by a ball mill. Thereafter, 0.1 wt% of PEG400 was further added and subjected to a last stage of mixing. A resin composition for cleaning molds was obtained.

On page 8, lines 10-15, the paragraph should be amended as follows:

340 weight part of [malamine] melamine, 100 weight part of urea, and 550 weight part of 37% formaldehyde aqueous solution were poured into a flask. After the mixture was heated and refluxed at a temperature of 70°C for 50 minutes, it was allowed to cool to 50°C, after which, it was heated and refluxed again at a temperature of 100°C for 100 minutes, then dried under a vacuum. A semi-cured type of amino resin of [malamine-phenol-formaldehyde] melamine-phenol-formaldehyde having 85% of solid content and a gelation time of 5 to 6 minutes (measured under 150°C) was obtained.

On page 8, lines 16-21, the paragraph should be amended as follows:

30 wt% of the semi-cured substance, 48 wt% of [malamine] melamine resin, 20 wt% of silica powder with mean particle size less than 20 m, 1.8 wt% zinc stearate, 0.08 wt% of PEG400, 8 wt% of paper pulp, and 0.12 wt% of benzoic acid, based on 100 wt% total weight of resin composition, were homogeneously pulverized, kneaded and mixed by a ball mill. Alternatively, other means could be used to homogeneously pulverize and sufficiently mix the components. A resin composition for cleaning molds was obtained.

On page 8, line 23 to page 10, line 1, the text should be amended as follows:

The same procedures as [carrier] carried out in example 1 were repeated, except that 0.1 wt% of benzoic acid in example 1 was decreased to 0.01 wt%. A resin composition for cleaning molds was obtained.

Example 5

The same procedures as [carrier] carried out in example 1 were repeated, except that 20 wt% of the semi-cured substance in example 1 was changed to 30 wt% and 50 wt% of [malamine] melamine resin was changed to 40 wt%. A resin composition for cleaning molds was obtained.

Comparative Example 1

The same procedures as [carrier] carried out in example 1 were repeated, but releasing agent, zinc stearate and PEG400, were not added and the amount of silica powder was changed to 21.8 wt%. A resin composition for cleaning molds was obtained.

Comparative Example 2

While the same procedures as [carrier] carried out in example 1 were repeated, without the addition of releasing agent, zinc stearate, were not added. A resin composition for cleaning molds was obtained.

Comparative Example 3

While the same procedures as [carrier] carried out in example 1 were repeated, releasing agent and, PEG400, were not added and the amount of silica powder was changed to 20.08 wt%. A resin composition for cleaning molds was obtained.

Comparative Example 4

While the same procedures as [carrier] carried out in example 1 were repeated, the amount of releasing agent, zinc stearate, was increased to 11.72 wt%. As well, the amount of silica powder was changed to 15 wt%, and the amount of [malamine] melamine resin was changed to 15 wt%. A resin composition for cleaning molds was obtained

Comparative Example 5

While the same procedures as [carrier] carried out in example 1 were repeated, the amount of releasing agent, zinc stearate, was changed to 0.72 wt% and the amount of silica powder was changed to 21 wt%. A resin composition for cleaning molds was obtained.

Comparative Example 6

The same procedures as [carrier] carried out in example 2 were repeated, but 20 wt% of semi-cured type of amino resin was decreased to 10 wt% and 49 wt% of [malamine] melamine resin was increased to 59 wt%. A resin composition for cleaning molds was obtained.

Comparative Example 7

While the same procedures as [carrier] carried out in example 1 were repeated, the amount of zinc stearate was changed to 1.2 wt% and the amount of PEG400 was changed to 0.6 wt%. A resin composition for cleaning molds was obtained.

IN THE CLAIMS

1. (Amended) An amino resin composition for cleaning molds, comprising 30 to 60 wt. % of thermosetting resin [and] which consists of 40 to 70 wt. % of at least one methylol-containing amino resin [which has] having at least 75 wt. % of solid content.
2. (Amended) The amino resin composition for cleaning molds according to claim 1, wherein said amino resin is selected from the group consisting of urea, amino compounds of [malamine] melamine, formaldehyde and the derivatives thereof.

10. (Amended) The amino resin composition for cleaning molds according to [claims] claim 1, wherein curing time of the amino resin composition for cleaning molds is in the range of 450 to 750 seconds, measured by using JSR type of curing meter.
11. (Amended) The amino resin composition for cleaning molds according to claim 1 [and 2], which is made into a tablet [from] form.
12. (Amended) The amino resin composition for cleaning molds according to claim 1 [and 2], which is made into a sheet [from] form.
13. (Amended) The amino resin composition for cleaning molds according to claim 1, which is made into a powder [from] form.
14. (Amended) An amino resin composition for cleaning molds, [said composition includes from] comprising 30 to 60 wt. % of thermosetting resin [and] which consists of 40 to 70 wt. % of a semi-cured additive of at least one methylol-containing amino resin [which has] having at least 75 wt. % of solid content.
15. (Amended) The amino resin composition for cleaning molds according to claim 14, wherein said amino resin is selected from the group consisting of urea, amino compounds of [malamine] melamine, formaldehyde and the derivatives thereof.
24. (Amended) The amino resin composition for cleaning molds according to claim 14, which is made into a tablet [from] form.
25. (Amended) The amino resin composition for cleaning molds according to claim 14, which is made into a sheet [from] form.
26. (Amended) The amino resin composition for cleaning molds according to claim [1 and 2] 14, which is made into a powder [from] form.